



## **The correlation between two dietary assessments of carotenoid intake and plasma carotenoid concentrations: application of a carotenoid food-composition database**

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**Abstract:** A newly available carotenoid food-composition database providing specific carotenoid values for > 2300 foods was linked to dietary data on 57 male nonsmokers to examine the association between dietary carotenoid intake and plasma carotenoid concentrations over 3 wk when free-living. Carotenoid intake was estimated from a food-frequency questionnaire (FFQ) and 7 d of food diaries with concurrent analysis of plasma carotenoid concentrations. After adjustment for energy intake, percentage of energy from alcohol, and plasma lipid concentrations, significant diet-plasma correlations for the FFQ and the food diaries (FD) included alpha-carotene ( $r = 0.29$  and  $0.43$ ), beta-carotene ( $r = 0.36$  FFQ only), beta-cryptoxanthin ( $r = 0.46$  and  $0.44$ ), lutein ( $r = 0.44$  FD only), and lycopene ( $r = 0.53$  FD only). Dietary carotenoid intakes were associated with plasma carotenoid concentrations for all the carotenoids except for beta-carotene when food diaries were used whereas the diet-plasma correlation for the provitamin A carotenoids were consistently significant when the FFQ was used.